

## Aircraft Crew Chief 201

(Roles and Responsibilities)





Major Martin 'Stryker' Heller NCWG Aircraft Maintenance Office (AMO) February 25<sup>th</sup>, 2020

### Aircraft Crew Chiefs are CAP's Air Missions Frontline

CAP REGULATION 20-1: Organization and Mission, & CAPR 66-3, Aircraft Maintenance

- Does not list Crew Chief; share roles of aircraft management between Operations, Emergency Services, Maintenance and Cadet Operations Officer positions.
  - At squadron level, you would be assigned as the Maintenance Officer, and often, as (an assistant) Operations Officer.

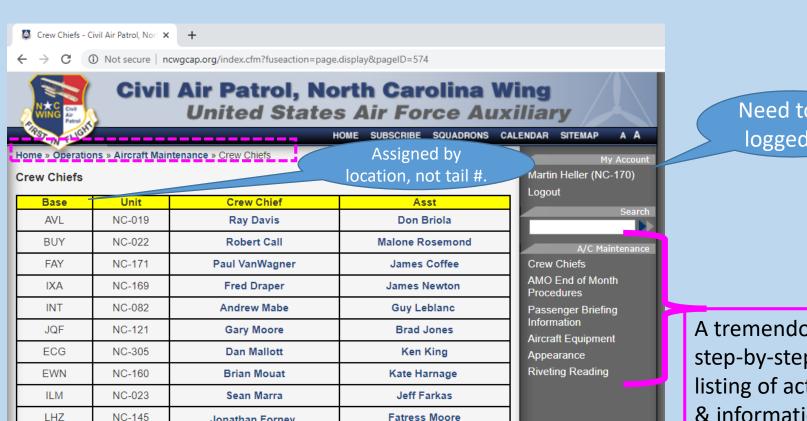
#### Roles:

Assist their commander in developing an aircraft maintenance management program

- Ensure that CAP aircraft meet FAA standards, to assure continued airworthiness.
- Coordinate aircraft inspections and repairs
- Conduct/organize Preventative Maintenance (aircraft cleanings, purchasing oil & supplies, etc.)
- Conduct monthly inspections and reporting
- Other tasks as assigned....



"The go-to guy^ at your airport for CAP aircraft"



Jeff Roseberry

Karl Noffke

Dion Viventi

Need to be logged in.

A tremendous step-by-step listing of actions, & information throughout the entire "Operations Website."

E-mail linked (check yours)

L-23 Blanik NC-145 **Dave Laitinen** 

Jonathan Forney

Todd Milstead

Jeremy Browner

John Matter

David Hopewell

Crew Chief Information Briefing

NC-162

NC-048

NC-170

NC-057

SVH

RDU

SUT

RWI

Current as of: 23 Feb 20

### More Specific Job Responsibilities - Operational

- Squadron POC for aircraft safety issues, discrepancies, and squawks
  - Ensures physical safety/ Protection at airfield
  - Coordinates local safe haven location and/or fly-out when necessary
- Updates GPS database(s) every 28-day cycle (updates in AMRAD) (see slide)
- Maintains relations with local mx shops
  - Coordinates 50-hour oil changes with local maintenance
  - Coordinates unscheduled mx/grounding item repair after permission from AMO
  - Annually obtains certificate of insurance from local mx & forwards to AMO
- Coordinates 100 hour/annual inspection with Wing Aircraft Maintenance Officer including review discrepancies, squawks and recurring periodic mx (pitot static/ x-pndr checks, mag checks, corrosion protection, etc.....
  - Updates AMRAD, and/or AC-reports@ncwgcap.org whenever work is done.
- Coordinates squadron biannual aircraft wash (usually Mar/Sep) & annual Wax.
- Other 'off-the-wall' tasks as requested.

### Aircraft Maintenance Repair and Documentation (AMRAD)

- AMRAD is CAP's new Aircraft Maintenance Repair and Documentation application in eServices. (links to, but is not in WMIRS)
- Active since 27 Aug 19, AMRAD is accessed through eServices https://www.capnhq.gov Select Menu > Logistics > AMRAD.
- It takes the place of most of the functions currently residing in the WMIRS
  Maintenance Module and adds several new aircraft maintenance tools to
  assist with flying and maintaining our CAP aircraft.
- It allows the entry of new aircraft discrepancies, transmits them to the Aircraft Maintenance Officer for validation and facilitates the flight release process.
- New aircraft maintenance requests can be entered, reviewed, parts can be ordered and NHQ approvals can be processed all in one location.
- It is designed to provide real-time visibility to aircraft status, open and closed discrepancies, aircraft inspection data, maintenance and repair requests, and parts orders and tracking data.
- Training for the new application is available in AXIS, CAP's online training site at https://www.capnhq.gov/CAP.LMS.Web/Default.aspx. (See attached AMRAD & AXIS user manuals.)

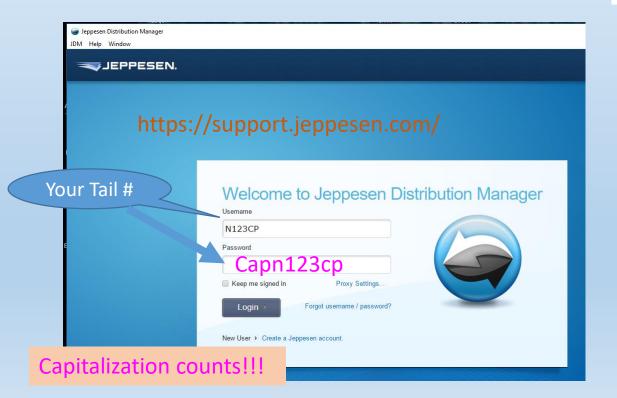
"Eliminates a lot of e-mails; makes information easier to find"

### **GPS Updates**

Need the 'Jeppesen Distribution Manager (free download)

Note: Updates are linked to tail #:

- Won't load if you swap cards (or have old files from another aircraft on the card)
- More instructions in ops manual (also online at: ncwgcap.org/operations

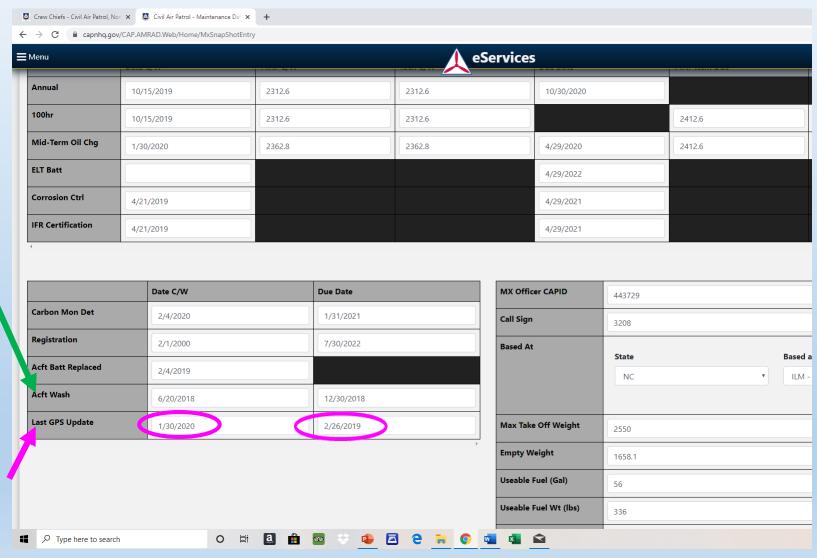




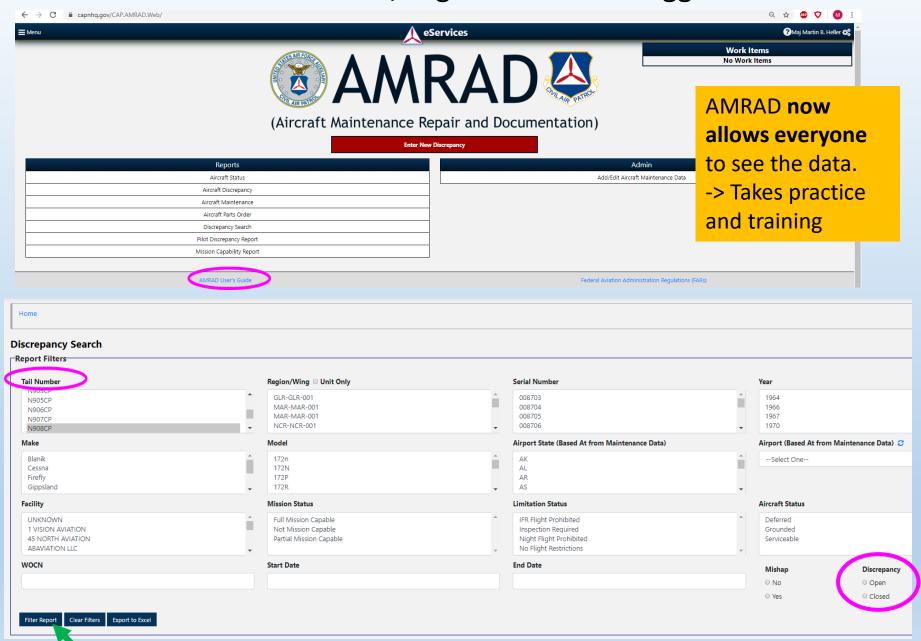
For G1000 aircraft, SD Card, goes into upper right slot First on PFD;
Then after loading then load on MFD.
→Doesn't need to remain in slot after uploading.

After successful update; Document in AMRAD (next slide)

# After successful update; Document in AMRAD (Add/Edit Aircraft Maintenance Data)



### AMRAD - Aircraft Search / Right Selection is biggest battle.



### Washing Aircraft

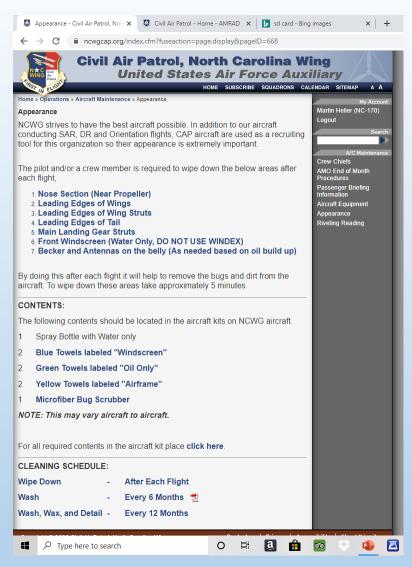
Wash at least twice a year, wax/detail once a year. Document in WMIRS.

- → Aircrews are supposed to wipe down leading edges, cowling, and windshield after each flight.
- → More than just appearances, it helps identify problems, used to determine upgrades, recruiting, etc.
- → Not just exterior; vacuuming, stain clean- up, overstuffed seat pockets, manuals, etc.



Simple Green is bad for aluminum. (Corrosion)

NHQ / NCWG recommends
Dawn dishwashing soap



Details available on the NCWGCAP website: (Aircraft maintenance/appearance)

https://www.ncwgcap.org/index.cfm?fuseaction=page.display&pageID=668

### More Specific Job Responsibilities – Administrative

- → Updates AMARD/WMIRS maintenance screens on aircraft status, discrepancies, aircraft location, oil, annual and other maintenance calendar and hourly clocks, etc...
- → Maintains and updates the aircraft's aeronautical information file (AIF).
- → Reviews aircraft logbooks, and forwards photocopy of new logbook entries to <u>acreports@ncwgcap.org</u>
- → Monthly aircraft log consolidation (compares aircraft paper logs with WMIRS log)
  - → Completes Excel Form 10
  - → Documents monthly aircraft inspection on Form 71 (more next slide)
  - > Reviews upcoming mx items and forwards all the above to ac-reports@ncwgcap.org
    - → NLT 5<sup>th</sup> day of the month!!!
- → Responds enthusiastically to Wing and higher unusual requests.



### More Specific Job Responsibilities – Administrative

### Monthly aircraft inspection on Form 71

→ Reviews upcoming mx items and forwards all the

above to ac-reports@ncwgcap.org

- → Mostly, it's a checklist
  - $\rightarrow$  Periodic Maintenance (items 1a  $\rightarrow$  1d)
  - → AMARD Comparisons (items 1e, f)
  - $\rightarrow$  AIF updates (item 1h 1 $\rightarrow$ 6)
  - → Aircraft Interior (items 2 a—p)
    - → Books, labels, placards, survival gear, etc...
  - → Aircraft Exterior (items 3a-i)
  - → Exterior and Interior Lighting (4a-f)
  - → Gives you (and NCWG) a monthly look to find, correct or replace items & issues.

Do it thoroughly will take a good hour.

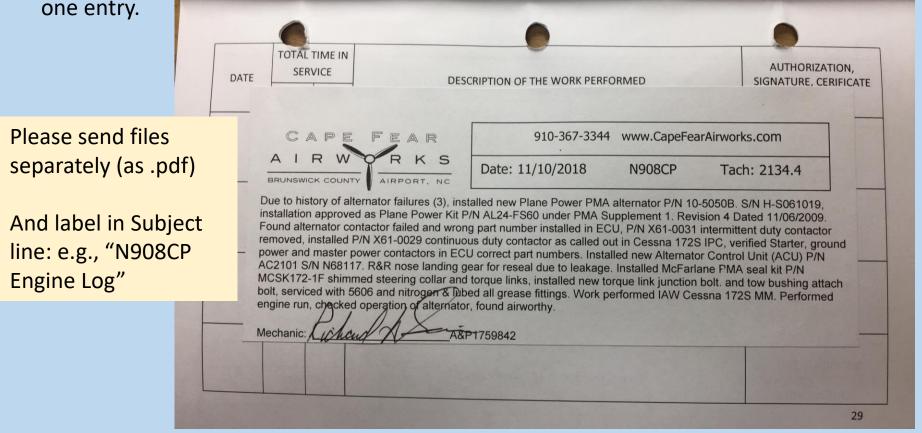
CAP Aircraft Insp	ection Checklist							
Wing		Tail#		Make		Cur Tach Time		
Inspection Date		Inspector CAP ID		Model		Cur Hobbs Time		
1. Aircraft Log Boo	ks / Records, POH, AIF				Y/N/NA		Notes	
A. Mid Cycle/100-Ho	ur/Annual) limits compli-	ed with (Ref. CFR 91.41	17, CAPR 66-1)					
Date Cur		Tach Time		AD Comp				
Date Prev		Tach Time		AD Comp				
Date Prev		Tach Time		AD Comp				
B. ELT Battery Che	cks Current (12 M	. Ref: CFR 91-207)						
Date Cur								
Date Prev								
C. Corrosion Contro	ol - Entry in Log Book	(biennial or annual in	FL/HI/P-Rico - CAPF	2 66-1)				
Date Cur								
Date Prev								
D. Altimeter/Pitot-	Static/Transponder Syst	ems Current - (24 Mo	Ref: CFR 91.411 &	413)				
Date Cur				L				
Date Prev								
	crepancies accurately r	eflect current status of	the aircraft					
	t page agrees with main							
	d STCs on file (180 hp	engine, mods) checkli	ist speeds match STC					
	1) CURRENT VERSIO	N OF CONTENTS Ref	(CAPR 60-1, 2-4e) on 6	capmembers.com				
H. AIF		the AIF are current IAV						
- Current version		ded Placard" is in the Al						
- Correct - Accurate		isher forms (CAPR 66-						
- Accurate		t matches most current i						
I. Weight and Balan	ce - Current factory or			)				
2. Aircraft Interior					Y/N/NA			
	1) Airworthiness Certi	ficate (Ref. CFR 91.2	103)					
	2) Posistration	(D ≈€ ("ED 01	202)					
A. Required	Operating Handboo	k (Airolane Flight Maro	al/POH) (Ref CFR	91.9)				
Documents in Aircrat	4) Current Weight & F	lalance Data (Ref.	Acft Flight Manual / PO	H)				
		nin Avionics (Ref. Cock						
B. CAP-approved c			Revision #	I				
C. POH current revi			Revision #		-			
	ts, Leaks, Corrosion, Cles							
	card Displayed (Ref. C.							
	Placard Displayed (Ref.							
	age Warning" Placard Di							
	ar Before Engine Start"							
	Placards (Ref. CFR 91.							
	Lock Installed (Ref. C							
	stinguisher / with gauge I		6-1)					
	Detector – Serviceability,							
	for Obvious Cracks and V							
	Seat Stop Installed (A							
	r Net Installed (Ref. C							
P. Survival Kit. (Re								
3. Aircraft Exterior	a. overcoorij				Y/N/NA			
	cked, Tied Down, and Co	ndition of Tie downs //*	ADR 66.1)		IMMA			
	caed, 11ed Down, and Co Leaks. Corrosion, Cleanlin		nercon)					
	– Nicks, Dents, Leaks, Co		on Strike					
	– Nicks, Denis, Leaks, Co decals on wings, doors an			olian)				
	oecais on wings, doors an Wear, Cracked Pads and (							
	wear, Cracked Pads and C r Pressure and Serviceabi							
	or Proper Fit / Fasteners S							
	or Hinge Pins Installed (	*******						
	erior Lighting For Prop	Y/N/NA						
A. Landing / Taxi / P								
B. Anti-Collision Stro								
C. Navigation / Position								
D. Flashing Beacon								
E. Cabin / Panel F. Instruments								

### Virtual Logbooks

NCWG keeps an electronic copy of every log book entry: Aircraft, Engine, Avionics and Propeller, as well as Weight & Balance.

Every mechanic's logbook entry is photographed and emailed to <u>ac-reports@ncwgcap.org</u>

 Usually done at KSUT consolidated Maintenance Facility; But any other location often does not. Need crew chief assistance. <u>Capture entire logbook page</u>; may have more than one entry.

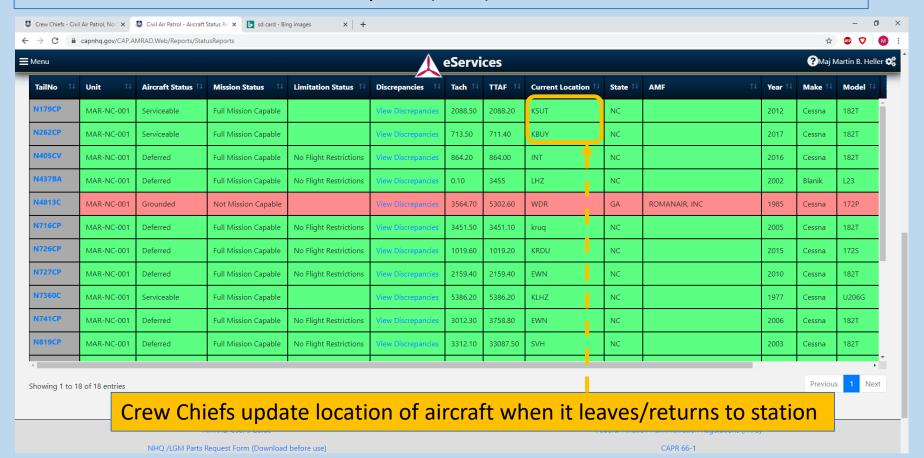


### AMRAD: Aircraft Status Reports (Used to be in WMIRS)

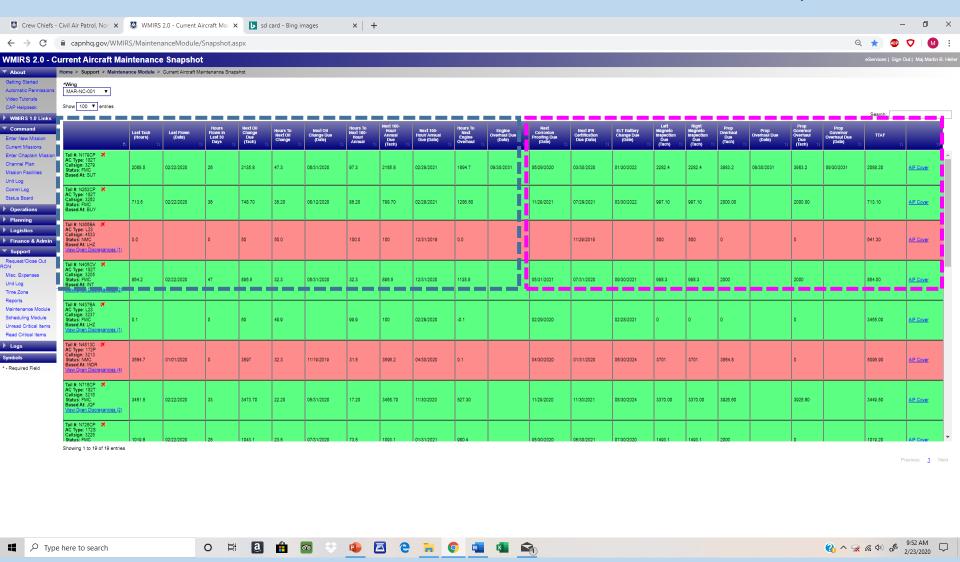
Color legend: Green: Full Mission Capable (FMC)

Yellow: Partially Mission Capable (PMC)

Red: Not Mission Capable (NMC)

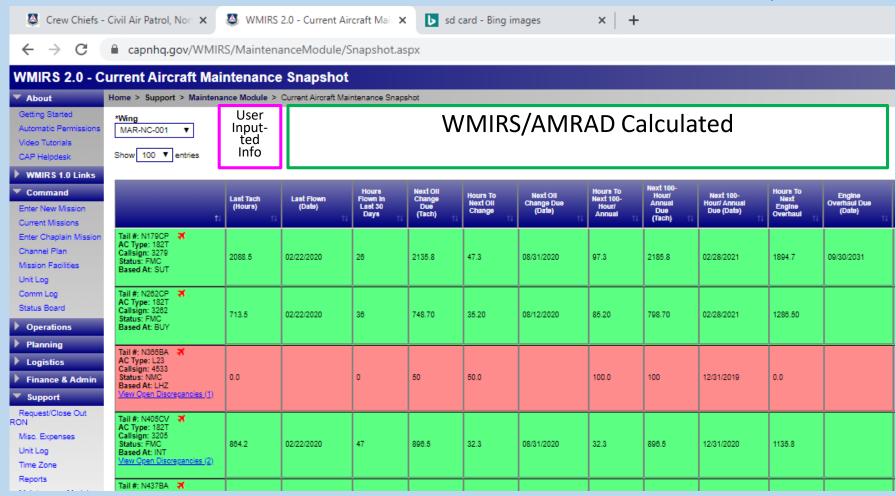


### AMRAD Maintenance Module Current Aircraft MX Snapshot



### Lots of information – Lets break it down

### AMRAD Maintenance Module Current Aircraft MX Snapshot

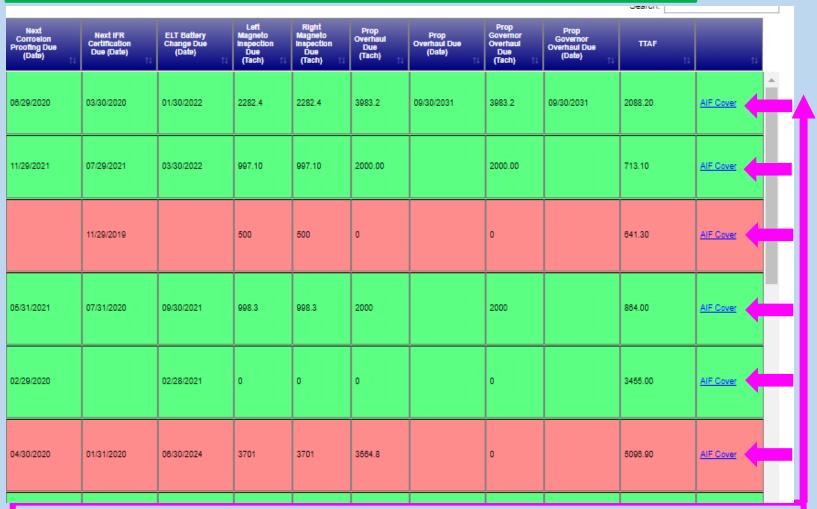


FYI: NCWG does annual inspections every 100 hours.

Oil Changes due every 50 hours (up to 60 hours) or 6-months

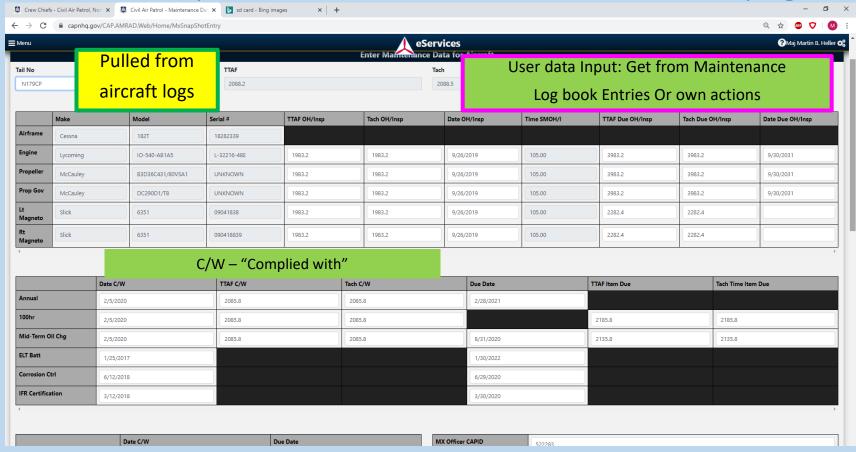
### WMIRS Maintenance Module Current Aircraft MX Snapshot

### AMRAD/WMIRS Calculated from user input



Here is where you get the Aeronautical Information File (AIF) cover page

### AMRAD Update Maintenance Information webpage



Crew Chiefs should also look here before an aircraft goes to 100-hr/annual to see if:

- 2-year corrosion
- Pitot/Transponder
- 500-hr Magneto Overhaul
- ELT batteries are due.

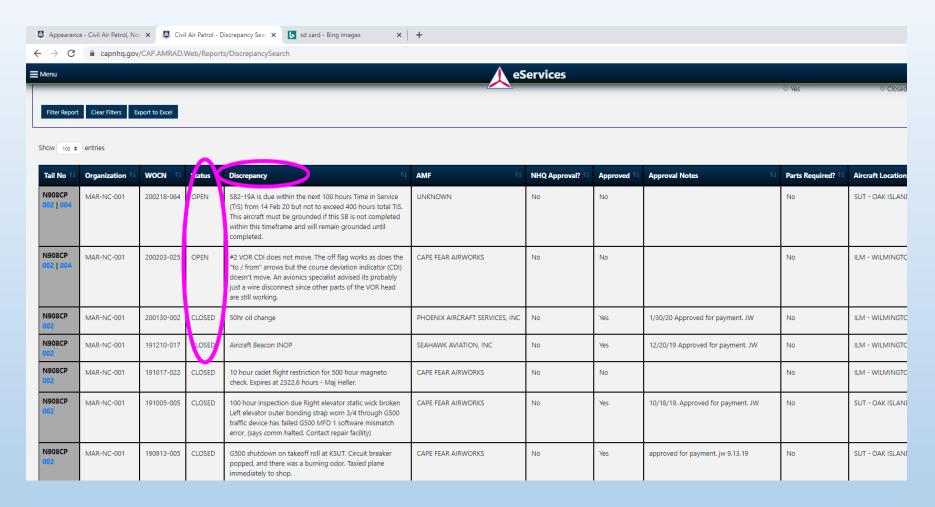
### Aircraft Discrepancy Entries

- With AMRAD, <u>anything</u> that will generate a bill, needs to have a entry which gives it a work order control number (WOCN). This allows NHQ to link aircraft squawks, maintenance actions, bills, estimates and history together.
- Discrepancies are "Need to warn pilots and maintenance" about problems and limitations
  - E.g., Window Hinge broke (grounding item)
  - Seat Track broke; avionics passenger side intercom not working
  - These should be separate items.
- Squawks are smaller significance Items
  - Static wick, or cowling screw missing, fuel cap chain disconnected
  - We can now laundry list squawks in AMRAD against an upcoming annual.
    - Open the 100-hour work order and add the list of squawks.

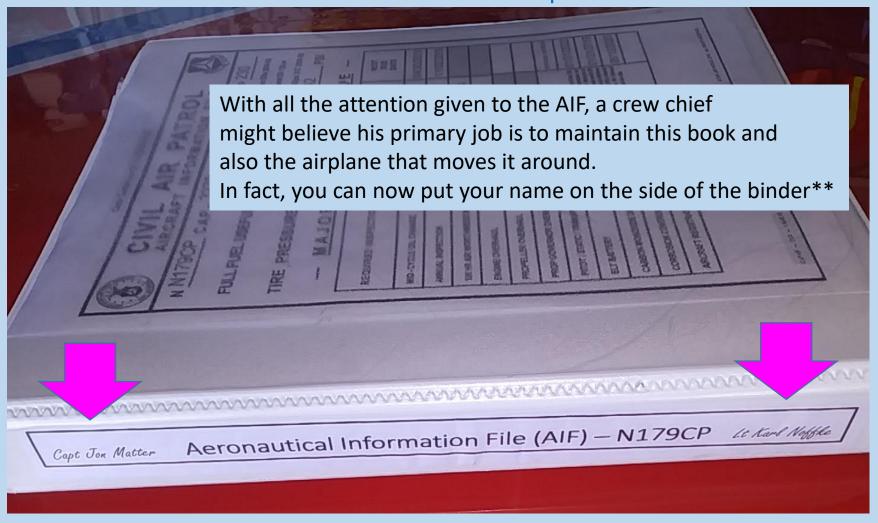
       AMOS

       AMOS

### Aircraft Discrepancy Entries – now in AMRAD

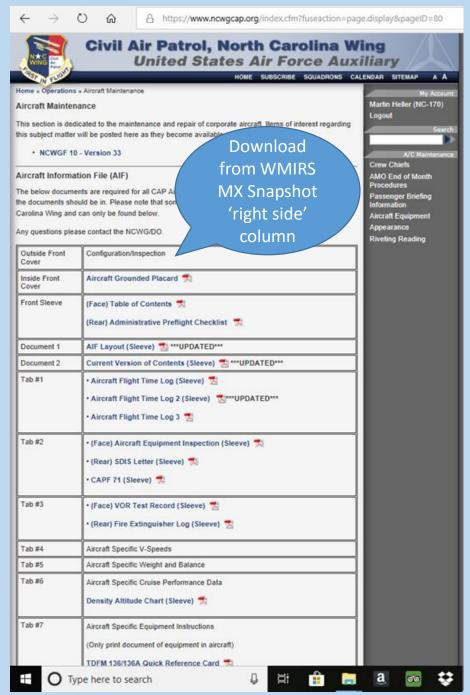


### AIF: You're the crew chief of the airplane's 'Bible' too.\*



<sup>\*</sup>Considered a 'bible' since it is full of answers, but nobody opens it to find them.

<sup>\*\*</sup> That is actually a joke; you might be the first person to laugh at it....



# AIF: More than Aircraft logs & VOR checks

Most items are hyperlinked on this webpage.

Same info as on Nat'l AIF webpage; only easier to find. https://www.gocivilairpatrol.com/programs/emergency-services/aircraft-operations/aif/

#### Key Items:

- Aircraft logs and mission symbol listing
- Aircraft specific V-speeds & W&B so you don't have to pull out the owners manual
- FM, MER Repeater and VIPER Radio frequency cards
- FM and Viper radio instructions
- Operations, maintenance and safety regulations
- NCWG Safety Supplement: Who to call
- NCWG Mx Supplement including: (on NHQ Pub page)
  - Email address to send MX bills
  - Email address to send logbook endorsement entries
- Blank CAPF 9's
- Listing of Loose and removable Equipment

### Where to Find Information:

#### **Regulations:**

- CAPR 70-1, CAP Flight Management (replaces R60-1)
- CAPR 66-1, CAP Aircraft Maintenance Management
  - NCWG Supplement to 66-1

#### Websites:

CAP National Stand/Eval webpage

https://www.gocivilairpatrol.com/programs/emergency-services/aircraft-operations/

CAP AIF webpage

https://www.gocivilairpatrol.com/programs/emergency-services/aircraft-operations/aif/

• CAP WMIRS webpage – Maintenance Tab

https://www.capnhq.gov/WMIRS/MaintenanceModule/Index.asp NCWGCap.org/operations / maintenance.

Google

#### **Specific documents:**

- AIF... The White Binder on the Mission Observer's seat
- CAPF 176 requests for maintenance and/or parts over \$500
- Riveting Reading Monthly NCWG newsletter
- (New address) NCWGOperationsOfficers@ncwgcap.org
   →Managed by job assignment

#### People:

- Wing staff: Lt Col Matt Urbanek, Ragland, Lt Col Bailey, or Majo
- Other crew chiefs
- If you don't know, ask. With 77 years and 560 current airplanes the continuity is there.



· Post-Flight Checklist - Balloon

FRO Checklist - Glider
 IMSAFE Checklist

Inflight Guide (CAP NESA)
 Passenger Briefing Guide

### NCWG Aircraft Maintenance Office Philosophies

- Continuity to manage assets well so we can keep our reputation/support
- Treat it as 'your dad's airplane.' When its down, you can't use it.
- Use local mx for oil changes, minor time-sensitive fixes, and hard breaks
  - Caveat: Some 'high end' FBOs cause us to do oil changes and time-sensitive fixes elsewhere
  - (Gently) Ride herd on your local maintenance and stay on top of repairs
- Use consolidated mx for periodic mx and non-critical fixes
- Judicious use of A9 funding carpool or tail swap to/from mx when possible.
- Expect and appreciate local crew chiefs to managing their aircraft

### Bottomline:

USAF/CAP/Public is entrusting NCWG with  $\sim$  18, \$25K  $\rightarrow$ \$550K assets to us to fly and maintain.

USAF/CAP pays for most of our flying and fuel, and all of our maintenance.

Because we do a very good job of meeting the mission, and maintaining the aircraft; CAP has been giving NCWG newer and better aircraft nearly every year.

## Questions?







## Backup Slides:



# 28 SM/Comp Sqdns -- 15 locations



#### Group 1 Hq (NC-011)

- · Asheville Composite Sqdn (NC-019)
- · Gastonia Composite Sqdn (NC-024)
- Shelby Composite Sqdn (NC-050)
- Hickory Composite Sqdn (NC-124)
- Boone Composite Sqdn (NC-153)

#### Group 3 Hg (NC-003)

- . Tar River Composite Sgdn (NC-057)
- Pitt-Greenville Composite Squadron (NC-079)
- Cunningham Field Composite Sqdn (NC-160)
- Halifax Composite Squadron (NC-169)
- Elizabeth City Comp Sq (NC-305)

#### Group 4 Hg (NC-004)

- . Burlington Composite Sgdn (NC-022)
- Sugar Valley Composite Squadron (NC-052)
- Winston Salem Composite Sqdn (NC-082)
- Randolph Composite Sodn (NC-107)
- Guilford Composite Squadron (NC-307)
- The NCLA Cadet Squadron (NC-825)

#### Group 5 Hg (NC-005)

- Fayetteville Composite Sodn (NC-007)
- Cape Fear Composite Sqdn (NC-023)
- . Goldsboro Composite Sqdn (NC-126)
- Brunswick County Composite Squadron (NC-170)
- Sandhills Senior Squadron (NC-171)

#### Group 6 (NC-006)

- 111th Search & Rescue Composite Sqdn (NC-111)
- Charlotte Senior Squadron (NC-121)
- South Piedmont Senior Sqdn (NC-137)
- Iredell Composite Sodn (NC-162)
- . Composite Squadron of the Waxhaws (NC-300)

#### Group 2 Ha (NC-002)

- Raleigh-Wake Composite Sodn (NC-048)
- Johnston County Composite Sqdn (NC-143)
- nklin County Composite Sqdn (NC-145) ange County Composite Sqdn (NC-150)
- Apex Cadet Sodn (NC-301)

## Our Fleet: Newer & Nicer

10 of 18 aircraft Newer than 2000

10 - C - 182's

6 - C - 172's

1- C-206

1 – Glider

8 - G1000s

Average age: 2001 (18 yrs)

Nbr	N-Number	Туре	Year	Based At:	Nickname	Remarks
1	<u>N262CP</u>	182T	2018	BUY	George	G1000 /WAAS
2	<u>N405CV</u>	182T	2017	INT		G1000 /WAAS
3	<u>N938CP</u>	182T	2015	LHZ	Max	G1000/WAAS
4	<u>N726CP</u>	172S	2015	RDU	Betty	G1000/WAAS
5	N179CP	182T	2012	SUT	Sandy	G1000/WAAS
6	<u>N727CP</u>	182T	2010	JQF	TEXAS	G1000/WAAS
7	<u>N963CP</u>	182T	2007	AVL	Gumby	G1000/WAAS
8	<u>N741CP</u>	182T	2006	ECG		G1000
9	<u>N819CP</u>	182T	2006	SVH	Dixie	Round Gauge/GNS 625
10	<u>N716CP</u>	182T	2005	FAY		G1000
11	<u>N437BA</u>	L23	2002	LHZ	n/a	Glider
12	<u>N908CP</u>	172S	1999	ILM		Garmin 500 / GTN650
13	<u>N99885</u>	172P	1986	AVL	Echo	Round Gauge / GNS 400
14	<u>N98426</u>	172P	1985	RWI	Sara	Aspen
15	<u>N4813C</u>	172P	1985	FAY	Frank	Round Gauge – Aspen/GNS 430
16	<u>N9930E</u>	182R	1985	IXA	Thor	Round Gauge / GNS 430/glider tow
17	<u>N99832</u>	172P	1985	INT		GNS 400 / Glider tow
18	<u>N7360C</u>	U206G	1977	LHZ	Lola	Round Gauge – Aspen 500

As of: 27 Jan 2020

### Who gets an Aircraft (so how does my squadron get one)?

Meet CAP needs by Respond to planned and no-notice taskings;

- No-notice: Search and rescue, aerial photography, transport, etc....
- Planned: Cadet orientation flights, local, other sqdns, encampment, training, exercises, special missions, Region and NHQ taskings, etc....

Squadron minimum requirements to qualify for an aircraft

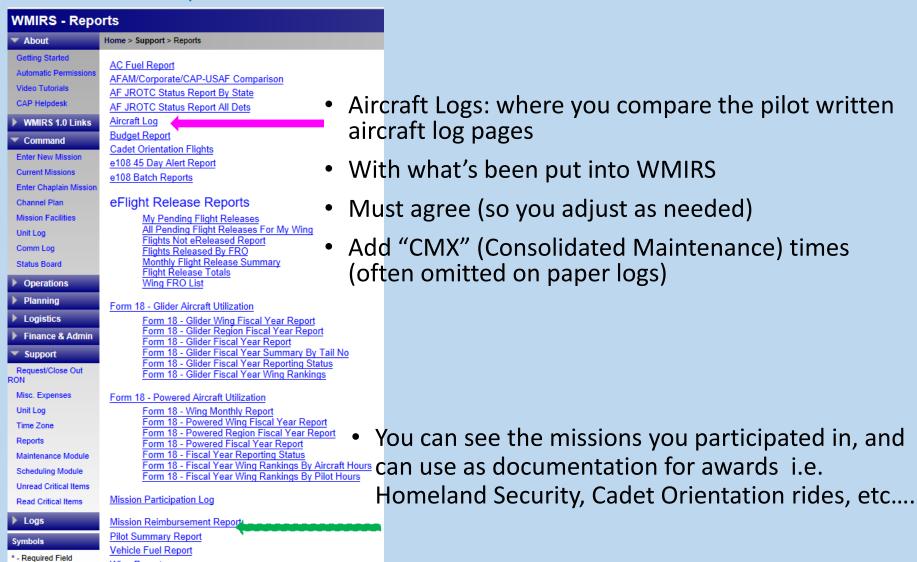
- Minimum 6 Mission Pilots
- Crew chief to manage aircraft
- Expectation of flying 22+hrs/mnth Flightline access for aircrews

- Local maintenance available
- CAP aircraft available
- Could share an aircraft, can have aircraft re-assigned from unit
- → NCWG/Director of Operations (leadership) decision



### **WMIRS** Reports

Wing Report
Average ORM Report
Latitude / Longitude Report



### Top 10 Wastes of MX Funds (Costs)

- #10: Not coordinating maintenance requirements within squadron
- #9: Calling in squawks after airplane turned over to maintenance
- #8: Overstuffing seat back pockets requiring re-gluing: (\$37.50 to re-glue)
- #7: Sending really dirty airplanes to maintenance. (\$75/hr to clean)
- #6: Yanking window shades out; instead of gentling handling them. (\$90)
- #5: Landing with feet on the brakes. (Two new tires & install: \$150+)
- #4: Landing with nose attitude above 12 degrees (tail strike) (>\$200 & up)
- #3: Leaving/opening Pilot or Pax window inflight (or during run-up. (New Window Hinge install: ~\$300)
- #2: Taxiing Over Ropes: Could cost destroyed prop & engine teardown
- #1: Landing on a C-182 nosewheel; depending on the damage.... \$\$\$\$\$